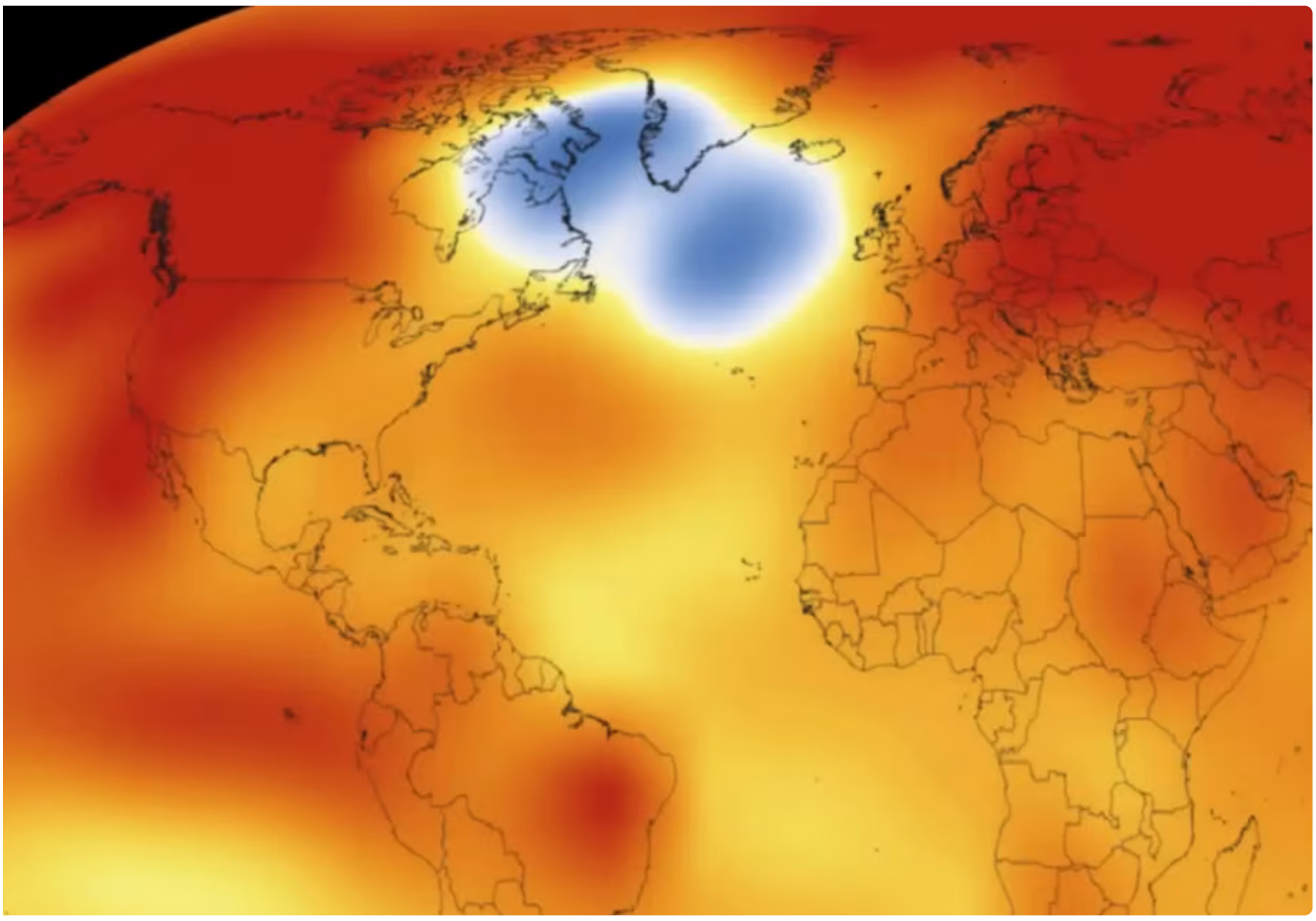
CLIMATE • 3 MIN READ

A mysterious ‘cold blob’ in the ocean has puzzled scientists. A new study says it’s an ominous sign

4 HR AGO

By Laura Paddison



The “cold blob” appears in a data visualization showing average temperatures in 2015, relative to the 1951-80 average *(NASA Scientific Visualization Studio/Goddard Space Flight Center)*

In the North Atlantic Ocean, south of Greenland and Iceland, a large patch of water is doing something very strange. While the rest of the **ocean heats up**, it’s been getting colder. A new **study** says it has the answer to this mystery — and it’s an ominous sign the world is hurtling toward one of the **most alarming climate**

tipping points.

The swath of ocean — dubbed the “cold blob” or “warming hole” — has cooled by **nearly 1 degree Celsius** (1.8 Fahrenheit) since 1900.

Scientists have long debated whether this anomaly is driven by heat loss from the ocean surface due to changes to winds and clouds, or whether it’s a signal of the weakening of a **critical system of ocean currents**, which transports heat. The new research concludes it’s the latter, and the finding points to a worrying future.

The Atlantic Meridional Overturning Circulation, or AMOC, works like a vast ocean conveyor belt, pulling warm water from the tropics to the Northern Hemisphere, where it cools, sinks and flows back south.

⛅ GET CNN WEATHER IN YOUR INBOX

- The forecast is just the beginning. We’ll send you expert coverage and the stories behind the weather — so you always know more than just the number. **Sign up for the newsletter**

A raft of research suggests this system is weakening as human-driven global warming melts ice and causes a surge of freshwater into the ocean, disrupting the AMOC’s delicate balance of heat and salinity. Some scientists warn the AMOC is heading **toward a tipping point**, potentially as early at this century, which would mean a future collapse is locked in.

An AMOC shutdown would be a **global catastrophe**, causing accelerated sea level rise on the US East Coast, plunging Europe into a winter deep freeze and shifting the monsoon in Africa, driving prolonged droughts.

AMOC IMPACTS

A crucial system of ocean currents is slowing. It’s already supercharging sea level rise in the US.

4 MIN READ

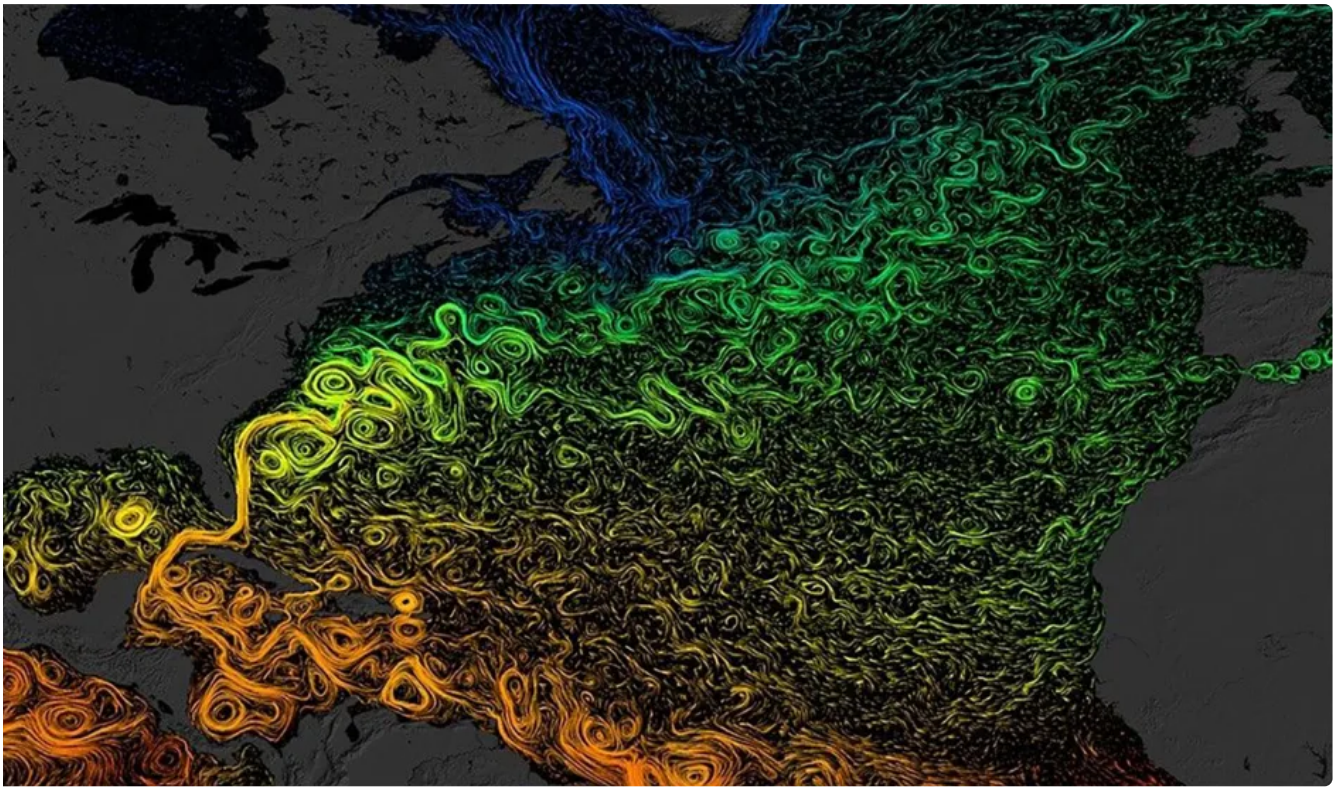
The cold blob has been interpreted by some as a fingerprint of AMOC change, because it’s the region to which the AMOC brings much of its heat.

To better unravel what’s happening in this part of the Atlantic, the study scientists combined real-world ocean heat data from instruments and satellites with climate models.

They found that cooling in the cold blob was not just happening on the surface but also deep in the ocean, where atmospheric conditions like winds and clouds have a much weaker influence.

All signs point to the influence of the AMOC, the study found. “It is changing ocean heat transport” which is driving the cooling of the cold blob, said Stefan Rahmstorf, a study author and a physics and oceans professor at Potsdam University, Germany.

There is also plenty of other **evidence** the AMOC is weakening, independent of the cold blob, he added, with some studies suggesting it’s at the **weakest it’s been in around 1,000 years**.



Visualization of ocean currents in the North Atlantic. The colors show sea surface temperature (orange and yellow are warmer, green and blue are colder). *(NASA Goddard Space Flight Center)*

Previous studies have demonstrated it’s possible to generate a cold blob through atmospheric conditions alone, said René van Westen, a marine and atmospheric researcher at Utrecht University, who was not involved in the research. But the fact the new study found consistent results across different datasets “strengthens the robustness of the conclusions,” he said.

David Thornally, a professor of ocean and climate science at University College London, also not involved in the research, said that the study bolsters evidence of a link between the cold blob and a weakening AMOC, but cautioned that the sparseness of real-world data means the available datasets “are best viewed as good approximations rather than perfect representations of reality.”

Uncertainties remain, he told CNN, and “I don’t think (this study) will be the final word on the issue.”

Jonathan Baker, a senior climate scientist at the UK Met Office, agreed, telling CNN “I would view this study as adding evidence for an AMOC contribution to the cold blob, rather than definitively settling the question.”

Search CNN...

Sign in

Live TV

Listen

Watch

World

US Politics

Business

Markets

Health

Entertainment

Tech

Style

Travel

Sports

Science

Climate

Weather

World Cup 2026

Ukraine-Russia War

Israel-Hamas War

Features

Watch

Listen

Games

About CNN

CNN Climate

FOLLOW CNN

DOWNLOAD THE CNN APP

Download on the App Store GET IT ON Google Play

Terms of Use Privacy Policy Manage Cookies+ Ad Choices Accessibility & CC About Newsletters Transcripts

© 2026 Cable News Network. A Warner Bros. Discovery Company. All Rights Reserved.
CNN Sans ™ & © 2016 Cable News Network.